

### **REMARKS**

After entry of this amendment, claims 4-14, 24, and 45-49 are pending. Non-elected claims 1-3, 15-23, and 25-44 are cancelled without prejudice or disclaimer. New claims 46-49 were added. Support for the new claim 46 is found in the original claim 12 and in the specification at page 9, lines 20-23. New claim 47 finds support in the original claim 13 and in the specification at page 9, line 25 to page 11, line 4. Support for the new claim 48 is found in the specification at page 12, lines 5-17. New claim 49 finds support in the original claims 19 and 24, and in the specification at page 13, lines 23-25. The claims have been amended without prejudice or disclaimer to delete the non-elected subject matter and to address the various points made in the Official Action. The amended claims find support *inter alia* in the original claims. Further support for the amendment made in claim 5 is found in the specification at page 13, lines 7-14. Claim 6 has been amended to clarify the origin of the leghemoglobin and the hemoglobin, support is found in the original claim. Claim 10 has been amended without prejudice or disclaimer to recite the nucleotide sequence as being one having at least 90% identity to the elected sequence. Support is found in the specification at page 15, lines 8-9 for SEQ ID NO: 1 and lines 16-17 for SEQ ID NO: 5. Claim 24 has been amended to recite the "gene structure" being vectors having nucleotide sequences with 90% identity with SEQ ID NO: 1 and SEQ ID NO: 5. Support is found in the specification at page 15, lines 1-9 for SEQ ID NO: 1 and lines 11-17 for SEQ ID NO: 5. Claim 45 has been amended to recite steps of the method for the production of starch and/or oil, support is found *inter alia* in the original claim. No new matter has been added.

### **Objection To the Claims**

The Examiner objected to claims for reciting non-elected sequences. The claims have been amended or canceled without prejudice or disclaimer to remove the non-elected subject matter. In view of the present amendment, this objection is removed.

### **Rejections under 35 U.S.C. § 112, Second Paragraph**

Claims 6, 12, 13, 24 and 45 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

In the present amendment, the claims have been amended or canceled without prejudice or disclaimer and are believed to address the rejections made under 35 U.S.C. § 112, second paragraph. Reconsideration and withdrawal of the rejections is respectively requested.

**Rejections under 35 U.S.C. § 112, First Paragraph**

Claim 10 was rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement and for lack of an enabling disclosure. Applicants respectfully disagree and traverse the rejections in view of the present amendments.

***Enablement Rejection***

The Examiner rejected claim 10 based on the specification allegedly not being enabled for sequences having less than 100% sequence identity to SEQ ID NOs: 5 and 6. The Examiner alleged that the specification lacked working examples and guidance as to what mutations or modifications could be made while retaining enzymatic activity. Applicants respectfully disagree. However, in order to expedite prosecution, the claims are amended without prejudice or disclaimer to recite that the leghemoglobin-coding sequence and the hemoglobin-coding sequence have at least 90% identity with the sequences of SEQ ID NOs: 1 and 5, respectively. Furthermore, the claim requires the nucleic acids to encode functional molecules which possess the leghemoglobin and hemoglobin activity. It is submitted that only routine experimentation would be required for one of ordinary skill in the art to determine whether a modified nucleotide sequence with at least 90% identity with the sequence of SEQ ID NOs: 1 or 5 has the required enzymatic activity. As recognized in *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988), enablement is not precluded by the necessity for some experimentation such as routine screening so long as it is not undue.

For these reasons and in light of the amendments, reconsideration and withdrawal of this rejection is respectfully requested.

***Written Description Rejection***

The Examiner also alleged that claim 10 lacks written description support. More specifically, the Examiner alleged that the specification did not adequately describe a representative number of species as encompassed by the 70% identity scope of the claim. In order to expedite prosecution, Applicants have amended claim 10 without prejudice or

disclaimer to recite 90% sequence identity to the nucleotide sequences of SEQ ID NOs: 1 and 5 and their enzymatic function. One skilled in the art could envision variant sequences within this range, based for example on the degeneracy of the genetic code. In light of these amendments, the rejection is believed to be rendered moot. Reconsideration is respectfully requested.

**Rejections under 35 U.S.C. § 102**

Claims 4, 6-14, and 20-24 were rejected under 35 U.S.C. § 102(e) as being anticipated by Harper et al., and under 35 U.S.C. § 102(b) as being anticipated by Sowa et al. Applicants respectfully disagree.

Please note initially that the claims as amended are drawn to a transformed plant expressing at least one leghemoglobin and at least one hemoglobin. Both Harper et al. and Sowa et al. references disclose a transformed plant expressing hemoglobin, but do not teach a transformed plant which expresses both leghemoglobin and hemoglobin, as now claimed. Therefore, it is submitted that neither Harper et al. nor Sowa et al. anticipate the claimed invention. Reconsideration and withdrawal of the rejection is respectfully requested.

**Rejections under 35 U.S.C. § 103**

Claims 4, 6-8, 11-14, and 45 were rejected under 35 U.S.C. § 103 as being obvious over Sowa et al. in view of Arntzen et al. The claims were also rejected under 35 U.S.C. § 103 as being obvious over Sowa et al. and Arntzen et al., further in view of Trevaskis et al. Applicants respectfully traverse.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. See MPEP § 2143.03. It is submitted that Sowa et al., Arntzen et al., and Trevaskis et al., alone or in combination, do not disclose or teach all the claim limitations.

As discussed above, Sowa et al. do not teach a transgenic plant transformed with both leghemoglobin and hemoglobin coding sequences. Similarly, neither Arntzen et al. nor Trevaskis et al. teach a transformed plant expressing both leghemoglobin and hemoglobin. Absent the hindsight afforded by a reading of Applicants' disclosure, there was no teaching, suggestion, or motivation to transform a plant with both leghemoglobin and hemoglobin coding sequences. Accordingly, the subject matter as claimed would not have been obvious.

Reconsideration and withdrawal of the obviousness rejection is respectfully requested.

**Conclusion**

For at least the above reasons, Applicants respectfully request withdrawal of the rejections and allowance of the claims.

Accompanying this response is a petition for a three-month extension of time to and including March 8, 2007 to respond to the Office Action mailed September 8, 2006 with the required fee authorization. No further fees are believed due. If any additional fee is due, the Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-2775, under Order No. 13311-00008-US from which the undersigned is authorized to draw.

Respectfully submitted,

By 

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